



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,256	05/05/2006	Maria T. Abreu	025663-001310US	7450

20350 7590 12/29/2008
TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

GOLDBERG, JEANINE ANNE

ART UNIT	PAPER NUMBER
----------	--------------

1634

MAIL DATE	DELIVERY MODE
-----------	---------------

12/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/526,256	Applicant(s) ABREU ET AL.	
	Examiner JEANINE A. GOLDBERG	Art Unit 1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4 and 16-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4 and 16-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/08</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the papers filed October 9, 2008.
2. Currently, claims 1, 4, 16-30 are pending.
3. In view of the papers filed October 9, 2008, the inventorship in this nonprovisional application has been changed by the deletion of Kazuhito Sugimura.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of Office records to reflect the inventorship as corrected

4. All arguments have been thoroughly reviewed but are deemed non-persuasive for the reasons which follow.

5. This action contains a new grounds of rejection in view of *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (en banc).

6. Any objections and rejections not reiterated below are hereby withdrawn.

- a. The 102(a) rejection over Abreu has been withdrawn in view of the declaration filed on October 9, 2008 by Dr. Kent Taylor and in view of the statement under Rule 1.48(b) removing Sugimura from the inventive entity.

Therefore, the declarations under 37 CFR 1.132 filed executed on September 20, 2007 is sufficient to overcome the rejections. The declaration executed September 20, 2007 clearly states that Dr. Lin, Hang, Gaiennie, Vasiliauskas, Kam, Rojany, Papadakis are not co-inventors which clearly removes these co-authors.

Priority

7. This application is a 371 of PCT/US03/23926, filed July 30, 2003 and claims priority to 10/356736, filed January 30, 2003 and provisional application 60/407,391, filed August 30, 2002.

Drawings

8. The drawings are acceptable.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1, 4, 16-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The rejected claims are drawn to a process/method. The claimed invention falls within an enumerated statutory category, namely a process.

Claims 1, 4, 16-30 are drawn to a method of diagnosing or predicting susceptibility to a clinical subtype of Crohn's disease characterized by fibrostenosing disease independent of small bowel involvement by determining the presence or absence of a fibrostenosis-predisposing allele linked to NOD2/CARD15 to detect fibrostenosing disease wherein the fibrostenosis-predisposing allele is an insertion of a

G at position 248 of SEQ ID NO: 5 or an insertion of a C at position 294 of SEQ ID NO: 6 (SNP13).

In re Bilski No. 2007-1130 (Fed Cir. October 30, 2008) characterizes its machine-transformation test as "the governing test for determining patent eligibility of a process under section 101." Under this test, a claim is patent-eligible if (and as applied in *Bilski* apparently only if): "(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." The claims are not directed to patent-eligible subject matter since they are not tied to any particular machine or apparatus and they do not require any particular article to be transformed into another state or thing. Here, the claims are not tied to a particular machine or apparatus. The claim is only drawn to determining the presence or absence in an individual of a fibrostenosis-predisposing allele. This appears to encompass the review of the sequence from a piece of paper which is not tied to a particular machine or apparatus. Moreover, there is no transformation of a particular article into a different state or thing. The claims do not require any particular transformation of the material into a different state or thing. Again, the claims appear to encompass merely analyzing output of the nucleic acid sequence. In the instant claims, there is no transformation of an article or physical object to a different state. Transformation of data is not considered a physical transformation. Thus, the claims are not directed to patent-eligible subject matter.

As clearly noted in In re Comiskey No. **2006-1286** (Fed. Cir. Sept. 20, 2007), "the Supreme Court has reviewed process patents reciting algorithms or abstract concepts in claims directed to industrial processes. In that context, the Supreme Court has held that a claim reciting an algorithm or abstract idea can state statutory subject matter only if, as employed in the process, it is embodied in, operates on, transforms, or otherwise involves another class of statutory subject matter, i.e., a machine, manufacture, or

composition of matter. 35 U.S.C. § 101.” In *re* Comiskey, the PTO noted, “[t]he Supreme Court has recognized only two instances in which such a method may qualify as a section 101 process: when the process ‘either [1] was tied to a particular apparatus or [2] operated to change materials to a ‘different state or thing.’” (quoting *Flook*, 2006-1286 17 437 U.S. at 588 n.9). In *Diehr*, the Supreme Court confirmed that a process claim reciting an algorithm could state statutory subject matter if it: (1) is tied to a machine or (2) creates or involves a composition of matter or manufacture. 450 U.S. at 184. There, in the context of a process claim for curing rubber that recited an algorithm, the Court concluded that “[t]ransformation and reduction of an article ‘to a different state or thing’ is the clue to the patentability of a process claim that does not include particular machines.” *Id.* (quoting *Benson*, 409 U.S. at 70);¹³ see also *In re Schrader*, 22 F.3d 290, 295 (Fed. Cir. 1994) (holding when a claim does not invoke a machine, “§ 101 requires some kind of transformation or reduction of subject matter”).

Finally, the Comisky opinion states that mental processes- or processes of human thinking- standing alone are not patentable even if they have practical application. The Supreme Court has stated that “[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.” *Benson*, 409 U.S. at 67 (emphasis added). In *Flook* the patentee argued that his claims did not seek to patent an abstract idea (an algorithm) because they were limited to a practical application of that idea-updating “alarm limits” for catalytic chemical conversion of hydrocarbons. 437 U.S. at 586, 589-90. The Court rejected the notion that mere recitation of a practical application of an abstract idea makes it patentable, concluding that “[a] competent draftsman could attach some form of post-solution activity to almost any mathematical formula.” *Id.* at 590.

There is no recitation in the claims of producing a real-world result that is tied to a machine or apparatus or causes a transformation of an article. In other words, the outcome of the rejected methods lack a tie to the machine or apparatus and lack a physical transformation. Thus the claims are rejected as encompassing non-statutory subject matter.

Claim Rejections - 35 USC § 112- Enablement

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Newly amended Claims 1, 4, 16-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Factors to be considered in determining whether a disclosure meets the enablement requirement of 35 USC 112, first paragraph, have been described by the court in *In re Wands*, 8 USPQ2d 1400 (CA FC 1988). *Wands* states at page 1404,

“Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized by the board in *Ex parte Forman*. They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.”

The nature of the invention and breadth of claims

Claims 1, 4, 16-30 are drawn to a method of diagnosing or predicting susceptibility to a clinical subtype of Crohn's disease characterized by fibrostenosing disease independent of small bowel involvement by determining the presence or absence of a fibrostenosis-predisposing allele linked to NOD2/CARD15 to detect fibrostenosing disease wherein the fibrostenosis-predisposing allele is an insertion of a G at position 248 of SEQ ID NO: 5 or an insertion of a C at position 294 of SEQ ID NO: 6 (SNP13).

The invention is in a class of invention which the CAFC has characterized as "the unpredictable arts such as chemistry and biology." *Mycogen Plant Sci., Inc. v. Monsanto Co.*, 243 F.3d 1316, 1330 (Fed. Cir. 2001).

The unpredictability of the art and the state of the prior art

The art teaches genetic variations and associations are often irreproducible. Hirschhorn et al. (Genetics in Medicine. Vol. 4, No. 2, pages 45-61, March 2002) teaches that most reported associations are not robust. Of the 166 associations studied three or more times, only 6 have been consistently replicated. Hirschhorn *et al.* suggest a number of reasons for the irreproducibility of studies, suggesting population stratification, linkage disequilibrium, gene-gene or gene-environment interactions, and weak genetic effects and lack of power are possible factors that lead to such irreproducibility. Hirschhorn *et al.* caution that the current irreproducibility of most association studies should raise a cautionary alarm when considering their use as diagnostics and prognostics (p. 60, Col. 2). Thus, Hirschhorn cautions in drawing conclusions from a single report of an association between a genetic variant and disease susceptibility.

The art teaches that presence of SNPs in the same gene does not indicate that

each of the genes is associated with the same diseases. Meyer et al. (PG Pub 2003/0092019), for example, teaches that SNPs in the CADPKL gene are not each associated with neuropsychiatric disorders such as schizophrenia. Specifically Meyer teaches that cadpkl5 and cadpkl6 are not associated with the disease, however cadpkl7 has a p-value of less than 0.05, therefore an association exists. Each of these polymorphisms are SNPs within the CADPKL gene, however, it is apparent that they are not all associated in the same manner with disease. Thus, Meyer exemplifies that the association of a single SNP in a gene does not indicate that all SNPs within the gene are associated with the disease.

Additionally, Ioannidis (Nature Genetics, Vol. 29, pages 306-309, November 2001) teaches that the results of the first study correlate only modestly with subsequent research on the same association (abstract). Ioannidis teaches that both bias and genuine population diversity might explain why early association studies tend to overestimate the disease protection or predisposition conferred by a genetic polymorphism (abstract).

The art teaches p-values are used to assess whether studies are “real” or “pure chance”. Thisted (May 1998) discuss what a p-value is. Thisted states that the p-value is important to determining whether differences observed are “real”. Thisted states that “it has become scientific convention to say that p-values exceeding 0.05 (one in twenty) just aren't strong enough to be the sole evidence that two treatments being studied really differ in their affects” (page 5). Therefore, it is clear that significance in the form of a p-value helps to determine whether the analysis was due to chance alone or demonstrates a difference between two groups.

Ahmad et al. teaches the molecular classification of the clinical manifestations of Crohn's disease. 1007fsincC appears to have a statistically significant association of

$p < 0.0001$. 908Arg appears to have a statistically significant association with $p < 0.001$. Ahmad teaches stenotic disease was positively associated with the presence of a NOD2/CARD15 mutation, but this was not independent of the link with ileal disease. No other independent associations were found with disease behavior phenotypes (page 864, col. 1).

Lakatos et al. (Orv. Hetil. Vol. 145, No. 27, pages 1403-1411, July 2004) teaches NOD2/CARD15 mutations and genotype-phenotype correlations in patients with Crohn's disease in a Hungarian population. Lakatos teaches that G908R mutation was uncommon in Hungarian Crohn's patients. The presence of the mutation was associated with ileal but not fibrostenosing disease (abstract). While the numbering system differs, it appears that Lakatos G908R mutation is the same mutation as the instant specifications R675W (SNP8).

Kugathasan et al. (Gastroenterology, Vol. 126, No. 4, Supp. 2, pp A68, 524) teaches L1007FsinsC variant of CARD15/NOD2 is strongly associated with early onset and fibrostenosing behavior in pediatric Crohn's disease (CD). Kugathasan analyzes three SNPs within the CARD15/NOD2 gene. It is noted here also that the number scheme is different than the instant application. The L1007FsinsC variant appears to be instant SNP13. Kugathasan teaches that R702W and G908R may not play a major role in pediatric onset CD.

Vavassori et al. (Inflamm Bowel Dis. Vol. 10, No. 2, pages 116-121, March 2004) teaches CARD15 mutation analysis in an Italian population. Vavassori teaches that Leu1007fsinsC but neither Arg702Trp nor Gly908Arg mutations are associated with Crohn's disease. Vavassori teaches classifying according to disease course into three groups including fibrostenosing (page 117, col. 2). Vavassori teaches a trend of association was seen between Leu1007fsinsC genotypes and either involvement of the

distal ileum or fibrostenosing behavior. Vavassori teaches that the insC mutation was significantly associated with a fibrostenosing disease of the distal ileum. The insC homozygous genotype had an OR for fibrostenosing disease of the distal ileum of 11.1-fold (page 119, col.2). As illustrated in Table 5, the insC is stronger in homozygotes than in heterozygotes.

Guidance in the Specification and Working Examples

The specification analyzes relationship of NOD2/CARD15 rare variant alleles and clinical phenotypes of Crohn's disease in two cohorts. The claims are specifically drawn to diagnosing or predicting susceptibility to fibrostenosing disease. Genotyping and analysis was provided for three variant alleles stratified by phenotype. Results for the two cohorts was provided and reproduced below (see page 57, 59):

	R675W (SNP8)	G881R (SNP12)	3020insC (SNP13)
Cohort I	P=0.389	P=0.458	P=0.084
Cohort II	P=0.315	P=0.048*	P=0.018*

The specification teaches that in an analysis in a combined cohort representing cohort 1 and 2 the frameshift mutation 3020insC demonstrated the greatest association with fibrostenosing disease (p=0.006). As specifically provided by the data from tables on page 57 and 59, SNP8 and SNP12 do not appear to be predictably associated with fibrostenosing disease. The guidance provided by the specification amounts to an invitation for the skilled artisan to try and follow the disclosed instructions to make and use the claimed invention.

Quantity of Experimentation

The quantity of experimentation in this area is extremely large since there is significant number of parameters which would have to be studied.

As provided in the art, associations between mutations and phenotypes is complex in nature. Hirschhorn cautions in drawing conclusions from a single report of an association between a genetic variant and disease susceptibility. Ioannidis teaches that both bias and genuine population diversity might explain why early association studies tend to overestimate the disease protection or predisposition conferred by a genetic polymorphism (abstract). Therefore, given the teachings in the art, studies should be cautiously interpreted and analyzed. It is unpredictable that any mutation within a particular gene, namely NOD2/CARD15 or even a locus is associated with a particular phenotype, such as fibrostenosing disease, as required by the instant claims.

The claims have been amended to require an association of Crohn's disease characterized by fibrostenosing disease independent of small bowel involvement. This appears to be consistent with fibrostenosing disease. This does not appear to add any particular limitation of obtaining a patient without small bowel disease, it merely requires that the association is independent of small bowel disease. Abreu (Gastroenterology, Vol. 123, 2002) states that "the Ahmad et al. study did not, however, find an association between NOD2 variants and fibrostenosing disease that was independent of an association with small-bowel disease" (page 686, col. 1). Thus, it is unpredictable whether the instant study or the Ahmad study would guide the skilled artisan to draw conclusions. The skilled artisan would be required to perform additional experimentation to determine, if any association exists given the conflicting results taught in the art. To practice the scope of the claims as broadly as drawn, would require significant inventive effort, with each of the many intervening steps, upon effective reduction to practice, not providing any guarantee of success in the

succeeding steps.

Level of Skill in the Art

The level of skill in the art is deemed to be high.

Conclusion

In the instant case, as discussed above, in a highly unpredictable art where the art specifically teaches difficulties in providing associations between markers and phenotypes. Further, the art and the specification provides insufficient guidance to overcome the art recognized difficulties for obtaining a statistically significant association between a marker and a phenotype. Thus given the broad claims in an art whose nature is identified as unpredictable, the unpredictability of that art, the large quantity of research required to define these unpredictable variables, the lack of guidance provided in the specification, the absence of a working example and the negative teachings in the prior art balanced only against the high skill level in the art, it is the position of the examiner that it would require undue experimentation for one of skill in the art to perform the method of the claim as broadly written.

Response to Arguments

The response traverses the rejection. The response asserts the claims have been limited to diagnosis or prediction of susceptibility of the fibrostenosing subtype of Crohn's disease independent of small bowel involvement.

The Declaration by Dr. Kent Taylor which has been carefully reviewed. The declaration under 37 CFR 1.132 filed September 20, 2007 is insufficient to overcome the rejection of claims based upon enablement as set forth in the last Office action

Art Unit: 1634

because: It refer(s) only to the system described in the above referenced application and not to the individual claims of the application (see para 3-5).

The declaration opines that the findings of Lakatos regarding the R702W mutation (SNP8) are questionable (para 6). Regarding Ahmad, the declaration states that "additional detail is needed beyond a statement that a logistic regression was performed to determining this conclusion". The MPEP states, "although an affidavit or declaration which states only conclusions may have some probative value, such a affidavit or declaration may have little weight when considered in light of all the evidence of record in the application. In re Brandstadter, 484 F.2d 1395, 179 USPQ 286 (CCPA 1973)." Here, the statements in the declaration are conclusions which does not appear to outweigh the evidence of record because the references report associations which have been peer reviewed and report evidence contrary to applicants assertions. In view of the unpredictability, the enablement rejection is appropriate.

The declaration states valid association study requires a population 3-4 times larger than the population used in a study it is trying to disprove. As discussed above, the instant rejection is not suggesting that Lakatos, Vavassori or Ahmad disprove, but rather render the susceptibility of SNP13 unpredictable.

The response asserts Ahmad makes cursory remarks regarding the association between NOD2/CARD15 SNPs and fibrostenotic disease is not independent of ileal disease. This argument has been reviewed and is correct. However, when looking at the whole picture of enablement, the remarks by Ahmad weigh in favor of non-enablement.

Art Unit: 1634

It is noted that within applicants own specification, different cohorts are not associated with the SNP8 or SNP12 or SNP13 (see Table 5 and 6. The specification teaches:

	R675W (SNP8)	G881R (SNP12)	3020insC (SNP13)
Cohort I	P=0.389	P=0.458	P=0.084
Cohort II	P=0.315	P=0.048*	P=0.018*

The table illustrates the non-association in at least one cohort of the instant specification and SNP 8, 12 and 13.

Thus for the reasons above and those already of record, the rejection is maintained.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 1, 4, 16-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Ahmad et al. (Gastroenterology, Vol. 122, pages 854-866, April 2002).

The claims appear to have been amended to require an association of Crohn's disease characterized by fibrostenosing disease independent of small bowel involvement. It is not clear how this changes the scope of the instant claims, as this

Art Unit: 1634

appears to be consistent with fibrostenosing disease. This does not appear to add any particular limitation of obtaining a patient without small bowel disease, it merely requires that the association is independent of small bowel disease.

Ahmad et al. teaches the molecular classification of the clinical manifestations of Crohn's disease. Ahmad teaches genotyping using PCR primers (limitations of Claim 19). Table 9 illustrate surgical stenotic disease and analyzes 1007fsincC; 908Arg and 702Trp. 1007fsincC appears to have a statistically significant association of $p < 0.0001$. 908Arg appears to have a statistical significant association with $p < 0.001$. Ahmad teaches stenotic disease was positively associated with the presence of a NOD2/CARD15 mutation, but this was not independent of the link with ileal disease. No other independent associations were found with disease behavior phenotypes (page 864, col. 1).

11. Claims 1, 4, 16-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Radlmayr et al. (Gastroenterology, Vol. 122, No. 7, pages 2091-2095, June 2002).

The claims appear to have been amended to require an association of Crohn's disease characterized by fibrostenosing disease independent of small bowel involvement. It is not clear how this changes the scope of the instant claims, as this appears to be consistent with fibrostenosing disease. This does not appear to add any particular limitation of obtaining a patient without small bowel disease, it merely requires that the association is independent of small bowel disease.

Radlmayr et al. teaches the c-insertion mutation of the NOD2 gene is associated with fistulizing and fibrostenotic phenotypes in Crohn's disease. Radlmayr teaches patients with Crohn's disease were subdivided according to their respective phenotypes, e.g., fistulizing, fibrostenotic, or inflammatory by conventional clinical, endoscopic, radiologic, and histological criteria. When patients with Crohn's disease were stratified according to the respective disease phenotype, the c-insertion mutation was associated with the fibrostenotic phenotype ($p=0.023$)(page 2091, col. 2). As seen in Table 1, the number of patients with or without the c-insertion allele according to the diseases were compared (page 2092, col. 1).

Conclusion

12. No claims allowable.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Jeanine Goldberg whose telephone number is (571) 272-0743. The examiner can normally be reached Monday-Friday from 7:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones, can be reached on (571) 272- 0745.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The Central Fax Number for official correspondence is (571) 273-8300.

Art Unit: 1634

**/Jeanine A Goldberg/
Primary Examiner, Art Unit 1634
December 29, 2008**